

We claim:

1. A latent security marking formulation, comprising:
 - a phosphor pigment having at least two distinct emission wavelength characteristics, wherein at least one of said emission wavelength characteristics
 - 5 comprises fluorescent emission of light at a visible wavelength in response to excitation by irradiation of the pigment at an invisible wavelength, and wherein the phosphor pigment is provided with a particle size smaller than a predetermined maximum size for inkjet printing;
 - a volatile vehicle for carrying the pigment.
- 10 2. The formulation of claim 1, wherein the formulation comprises 1% to 5% by weight of the pigment.
3. The formulation of claim 2, wherein the formulation comprises less than
- 15 1% by weight of the pigment.
4. The formulation of claim 1, wherein the pigment comprises an insoluble inorganic material having a particle size of less than one micron diameter.
- 20 5. The formulation of claim 1, wherein the vehicle comprises at least one of a solvent, a resin, a surfactant and a conductive agent.
6. The formulation of claim 3, wherein the pigment comprises pigment particles cropped to particles of a resin binder.
- 25 7. The formulation of claim 1, wherein the pigment has distinct fluorescent responses at least at two excitation wavelengths, said distinct responses

including different emission spectra responsive to said two excitation wavelengths.

8. A method for applying a security marking, comprising the steps of:
 - 5 providing a phosphor pigment having an emission characteristic comprising fluorescent emission of light at a predetermined visible wavelength in response to excitation by irradiation of the pigment at a predetermined invisible wavelength, and wherein the phosphor pigment is provided with a particle size smaller than a predetermined maximum size for inkjet printing;
 - 10 milling the phosphor pigment to a particle size suitable for inkjet printing; combining the phosphor pigment with at least one of a solvent carrier, a resin subject to solution in the solvent and a conductive agent to provide a latent ink;
 - printing a substrate with the ink, by use of an inkjet printer, thereby
 - 15 marking the substrate with a latent marking that is normally inactive and is revealed by said excitation.
9. The method of claim 8, wherein the ink is provided with a concentration of the pigment below about 5%, whereby the ink is normally invisible after printing
 - 20 and is rendered visible by application of said irradiation at the predetermined invisible wavelength.
10. The method of claim 9, wherein the ink is provided with a concentration of the pigment of below about 1%, whereby the ink is normally invisible when
 - 25 applied to an otherwise uncoated surface of the substrate.
11. The method of claim 8, wherein the particle size has a maximum of about one micron mean diameter.

12. The method of claim 8, further comprising countering potential contamination of the pigment during said milling by at least one of cleaning to remove contamination of between milling operations, employing an abrasion resistant milling apparatus, and providing concurrent coloring agents comprising at least one visible dye or pigment arranged to conceal the contamination.

13. The method of claim 8, further comprising cropping the pigment particles after milling, particles of a resin binder.

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14. The method of claim 8, wherein the pigment has distinct fluorescent responses at least at two excitation wavelengths, said distinct responses including different emission spectra responsive to said two excitation wavelengths.

TOTAL 1014